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This paper tests whether voters are retrospective (backward looking) or prospective (forward looking). Previously, survey data has been used to measure future expectations. This paper is innovative because it measures future expectations with leading economic indicators used in the economic forecasting literature. I find that at the polls voters consider both past economic performance as well as expected future economic performance. I find that when election results are specified with actual wins and losses, voters put more weight on past and current conditions than they do on future expectations. However, when results are measured with vote share, voters seem to give past and future expectations equal weight.

A substantial literature seeks to ascertain whether macroeconomic conditions influence election results. Generally, scholars agree on a framework which tests whether voters reward politicians in the president's party for good economic times, while punishing them for poor economic times. This work assumes that voters have trouble monitoring the government's part in managing the economy, mostly because these government actions are not readily observable. However, voters do observe actual economic conditions and they can use macroeconomic performance as a crude proxy for the government's competence in managing the economy. Good policies are more likely to result

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in good economic times, while poor policies are more likely to result in downturns. Of course, the economy fluctuates for reasons that have nothing to do with government policy, creating some imprecision when voters attribute credit or blame.

However, there is a lively debate over what time period voters consider when holding politicians accountable. On one side of the controversy, the retrospective voter theory assumes voters consider recent macroeconomic or recent personal financial performance. On the other side of the disagreement, the prospective voter theory holds that voters are forward looking and when they vote, they reward or punish politicians based on their expectations about the future macroeconomic economy or their future personal wealth. The literature, reviewed below, has produced evidence on both sides of the debate.

Research by Duch, Palmer, and Anderson (2000) has raised serious questions about the approach used to measure future expectations when testing the prospective theory. Typically, future economic conditions are measured with survey data, which Palmer found were biased and not representative of general macroeconomic conditions. Surveys also suffer from another well-known problem; they only provide a limited amount of information about economic expectations. People are forced to answer questions that do not measure the magnitude of an expected economic change. Therefore, even if people have concrete expectations about the future, the surveys used fail to capture this information.

Given the problems with survey data, another approach is worth considering. This paper takes a first step in this direction by drawing on the economic forecasting literature to identify leading economic indicators. It seems reasonable that leading indicators are our best measure of aggregate economic expectations. Indeed, leading indicators have been used to predict future economic conditions for some time. Further, a rational voter will

use the best information available to form their expectations and these leading indicators can be used as a useful proxy for voter expectations.

This paper follows Estella and Mishkin (1998) who identify the stock market and the interest rate spread between securities with different terms to maturity as the two best leading indicators. These two variables have a significant advantage over survey data designed to elicit expectations. When people answer survey questions, they have nothing at stake and are, therefore, unlikely to take their answers seriously. However, the stock market and interest rates move based on decisions that people make with money. Since these decisions have monetary consequences, people will take them much more seriously.

This paper adds these two leading economic indicators to a retrospective model of voting that allows voters to settle up in House elections for the President's party 's performance. It finds evidence that past economic performance and expected future economic performance both play a roll in the electoral success of Presidential Party incumbents. Voters seem to be more retrospective when elections are measured with wins and losses, while they balance retrospective and prospective considerations more evenly when elections are measured with vote share.

RETROSPECTIVE VOTING

A retrospective voter considers only past and current information when evaluating an incumbent politician or party. This theory can trace its origins to Downs (1957) who wrote: "Therefore, we believe it is more rational for him [the voter] to ground his voting decisions on current events rather than future ones" (40). Much earlier and in a context that had nothing to do with voting, Keynes (1964) wrote that people use current conditions to form economic expectations:

> It would be foolish, in forming our expectations, to attach great weight to matters which are very uncertain. It is reasonable, therefore, to be guided to a considerable degree by the facts about which we feel somewhat confident, even though they may be less decisively relevant to the issue than other facts about which our knowledge is scanty. For this reason the facts of the existing situation enter, in a sense disproportionately, into the formation of our long term expectations; our usual practice being to take the existing situation and to project it into the future (148).

The subsequent retrospective voter literature has noted that an ill-informed electorate will have trouble understanding the implications of different government policies and know little of the economic competence of political candidates. However, people can gain insight into the ability of an incumbent by observing the actual state of the economy. This is a crude way to measure a government's competence. Even though voters who do not consider future expectations can be fooled by an incumbent politician, all incumbent politicians have an incentive to try and fool the electorate by priming the pump so the economy peaks at election time. Competent incumbents will be more successful in manipulating the economy both in general and to improve their electoral fortunes when they face reelection. Therefore, competent incumbents are more likely to be reelected than less able politicians.[1]

In the first important empirical study on this topic, Kramer (1971) finds growth in real per-capita income and inflation are statistically important in explaining House election results. Kramer held that the President's party was the governing party and House elections were a performance evaluation. His basic pre-

[1] See Fiorina (1978) or more recently for a good discussion see Lohmann (1999).

mise was that members of his team were more likely to win elections when economic conditions were favorable. The studies that have followed Kramer by using vote share to gauge electoral success have produced conflicting results. Tufte (1975, 1973) and Jacobson (1990) find evidence of a retrospective voter. However, Stigler (1973), Erickson (1988, 1990), Alesina and Rosenthal (1989), Alesina, Rosenthal and Londregan (1993), and Chappell and Suzuki (1993) all find little or no evidence that past or current economic conditions matter at election time.

When seat swing is the dependent variable, Lewis-Beck and Rice (1984) and Oppenheimer, Stimson and Waterman (1986, 1991) find the economy is influential in election results, while Campbell (1986, 1997) finds that they are not. Finally, when a return rate of Presidential Party incumbents is used as a dependent variable, Grier and McGarrity (1998, 2002) find strong evidence that the election year measures of inflation, unemployment and the growth in real per-capita income all influence elections as the retrospective model would suggest. That is, favorable results are rewarded and unfavorable results are punished.

There have been two main motivations attributed to voters in the retrospective voter literature. The first is that people vote their "pocket books." That is, they perceive their own economic well being and assign credit or blame for their fortunes to the incumbent President's party. The second motivation, called sociotropic voting, holds that people vote based on the current conditions of the whole country (Kinder and Kiewiet 1979).[2]

The various specifications of the election results equations, which all include macroeconomic variables, are consistent with

[2] Various off-shoots of the sociotropic theory have sprung up. Mutz and Mondak (1997) claim people vote in the best interests of a group (such as Black, Hispanic, female) rather the country's best interest. Shah *et al.* (1999) claim that media coverage of economic news may explain sociotropic voting. Gomez (2001) claims voters' levels of "sophistication" determines whether they are motivated by pocketbook or sociotropic concerns.

either motivation. The macroeconomic variables are relevant to a sociotropic voter. These variables also represent an aggregation of everyone's individual pocketbook. For instance, a high growth rate in personal per-capita income will result from individuals with growing income.

PROSPECTIVE VOTING

Just like the retrospective voting model rested on Keynes theory of how people make expectations about the future of the economy, the prospective voting model takes its inspiration from the Rational Expectations (RE) literature. In RE, people make decisions based on their expected future benefits and expected future costs. They are forward looking. Further, they have incentives to use information concerning the likelihood of future events to form their expectations and make their decisions. The prospective model claims people judge incumbent politicians based on what they expect to happen, not what has already occurred. That is, a voter judges a politician by the expected performance of the economy, not the actual performance.

DIFFERENTIATING RETROSPECTIVE AND PROSPECTIVE VOTING

Many studies have attempted to determine which voter model better explains the dynamics of electoral discipline. The issue is far from resolved. The dominant approach has been to explain Presidential approval with responses to surveys conducted by the University of Michigan Survey Research Center. MacKuen, Erikson, and Stimson (1992) report that expectations about general business conditions over the next five years are important in explaining Presidential popularity; this suggests prospective voting. Norpoth (1996) finds that voters are retrospective when va-

riables for scandal, war, and changes in the White House are added to the Presidential popularity equation.[3]

CALL FOR A NEW APPROACH

The surveys used to measure past and future expectations give only a limited amount of information. People respond to questions and are forced to give a dichotomous answer. For instance, will the economy be better in one year then it is now? A yes answer does not measure the magnitude of the expectation. Someone who thinks the economy will grow at an unprecedented rate is treated the same as someone who thinks the economy will do just marginally better. This lost information may lead to some of the conflicting results in the literature.

Duch, Palmer and Anderson (2000) identify another problem with the survey data. They claim that aggregated survey data is not very representative of objective economic conditions. They note that when voters respond to survey data, their responses are influenced by things such as their media exposure, life experiences, political attitudes, and various demographic variables. In a series of tests, they find that these other influences create a systematic bias in the aggregated survey data of economic perceptions. That is, the noise of the individual level data is not random and does not cancel out when aggregated.

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[3] When Michigan survey information is used to explain voter preferences in Congressional elections, the results remained mixed. Fiorina (1978) finds no evidence of retrospective voting between 1956 and 1974, while Kinder and Kiewiet (1979) find such evidence.

Haller and Norpoth (1994) try to explain what information people use to form expectations by testing whether people make adaptive or rational expectations. In the first type of expectation, people use past information to form their expectations of the future and would be retrospective voters. In the second type of expectation, people use all the information available to them including economic forecasts and would be prospective voters. These authors find that people use past information to forecast inflation and forecasts of general business conditions do not seem to fit either expectations model.

FORECASTS OF GENERAL BUSINESS CONDITIONS

Instead of looking at survey data, this paper looks at direct measures that forecast the future economic conditions. The most well-known measure of future economic conditions is the Treasury Department's composite index of leading economic indicators. Also, Stock and Watson have a rival index of leading economic indicators. However, these indexes are not very useful for this study since they start in 1959, and the election data sample used in this paper goes back to 1916. Further, the literature on economic forecasting suggests that these leading composite indexes are not the best predictors of future economic conditions. Estrella and Mishkin (1998) find that the difference in interest rates between government bonds with different maturity lengths as well as stock prices are the best indicators of a future recession. Using in sample estimates, as well as out of sample predictions, they conclude that adding additional explanatory variables does not help the predictive power of their estimates. They note that the Stock and Watson Index may not add much useful information because it is formed in part with the yield curve.

A rich literature backs up the predictive power of the stock market. The link between stock price and the expected future fortunes of a firm are well known. A stock price is the present value of expected future earnings per share of stock. Since the price of a stock is many multiples of current earnings, most of the price reflects the present value of earnings many years into the future.[4]

[4] For example, on January 17, 2003 the price earnings ratio of the firms in the Dow Jones Industrial Average was 22.01 (*Wall Street Journal*, C-2). To continue consider one firm, on Tuesday, January 21, 2003, Yahoo Finance reports that Microsoft has a P/E ratio of 29.57. Since they report that the consensus earnings per share estimate was 2.01 in 2003 and 2.16 in 2004, relatively similar figures, the bulk of the share price (almost 30 times earnings) must come from expectations formed about earnings several years in the future.

Broad measures of the stock market capture the earnings of so many firms that they rise and fall with expectations of the expected future macroeconomic conditions.

As early as 1938, Mitchell and Burns (1938) used a Dow Jones composite index as a leading indicator of macroeconomic fluctuations. Fama (1990) finds that real common stock returns are a leading indicator of capital expenditures, the real rate of return on capital, and the rate of change in real GNP. Schwert (1990) found that Fama's results hold up over 100 years of data. Bong-Soo Lee (1992) reports that real stock returns lead growth in industrial production. Using data sets that start as early as 1891, Barro (1990) finds that changes in real stock market prices precede by one year the changes in the growth in expenditures on capital goods.

The interest rate spread seems to be the best leading predictor of future conditions. It is simply the interest rate difference between a long and short term security. The idea is that the term structure of interest rates contains valuable information about economic expectations that other leading indicators can not capture. One explanation is that the interest rate spread can convey information about the current monetary policy. When the Federal Reserve has a tight monetary policy, short term rates will rise more than long term rates, reducing the interest rate spread. The high short term interest rate will be very likely to produce an economic downturn in the near term. (Bernanke and Blinder 1992). Or alternatively, a loose monetary policy will cause short term rates to fall more than long term interest rates, increasing the interest rate spread. The low short term rates may cause the economy to expand.[5]

[5] Also, the long term rate can be thought of as an equilibrium short term rate. Monetary policy can cause the short term rate to deviate from its equilibrium affecting the yield curve which will usefully capture the direction of monetary policy.

Another complementary explanation is that the interest rate spread also considers long term expectations. The long term interest rate contains expectation of the real interest rate as well as expected inflation. Since inflation and real output growth often move together with output leading inflation, the expected inflation part of the long term interest rate may provide information about the economy's future growth rate (see Estrella and Mishkin 1998, Mishkin 1990).

Estrella and Hardouvelis (1991) write that the difference between the yields of the 10 year government bond and three month T-bill can successfully predict future real GNP growth one and half to four years into the future.[6] Laurent (1989) also finds the spread useful in predicting real GNP growth. He defines the spread as the difference between (1) a spliced series of rates for the 20-year and the 30-year Treasury Notes and (2) the Federal Funds Rate. Estrella and Mishkin (1998) and Dueker (1997) found the interest rate spread was the best leading indicator of a recession.[7]

The stock market and interest rates have several advantages as leading indicators that survey data can not match. First, the stock market and interest rates convey information about the magnitude of positive or negative expectations about future general business conditions. They may indicate more precise expected changes than the survey data was able to generate. Second, the stock market and interest rates reflect real choices that people made based on their expectations of the future which may improve their value as an indicator relative to survey information. For instance, people are very likely to carefully consider

[6] This paper also finds that the interest rate spread forecasts future real GNP growth more accurately than surveys conducted by the American Statistical Association.

[7] For a complete review of the literature on the use of asset prices to forecast output see Stock and Watson (2003).

their opinion of future economic conditions before they buy or sell stock because this choice involves money. However, they are less likely to carefully consider their future expectations when they answer a questionnaire. In the later case, their choices have no economic consequences and they will not be as deliberate in signaling their expectations on a questionnaire as they will in the stock market.

The work that is most closely related to this paper is Palmer and Whitten (1999). They create a retrospective model of voting but split current conditions up so that voters can consider expected and unexpected inflation and growth. However, their work differs from this paper because they are not looking at future expected economic variables, but rather the component of present conditions that were unexpected.

LEADING ECONOMIC INDICATOR VARIABLES

The election data employed in this study goes back to 1916 which was chosen because it is the first election after the Federal Reserve opened its doors. Therefore, the same institution is responsible for monetary policy over the whole sample period. Stock market information is readily available over the whole time period considered. A holding period return will capture whether stock prices have increased or decreased. I specify this variable as W_t, which is the January to October holding period return of the deflated stock market index from the year of the election. I pick January as the beginning of the holding period since it is the start of the year of the election—the year from which most retrospective models draw their data. I end the period in October since it is the month before the election. In an alternate specification, I also construct this variable as the holding period return in the year of the election (January to December). The Standard and Poor's 500 Index (S&P 500) is employed to capture the stock performance of firms in the economy at

large. In the early part of the sample (until 1932), the stock price index is deflated with Warren and Pearson's Wholesale Price Index (10-13). In the later part of the sample (after 1932), the stock price series is deflated by the Producer Price Index for All Commodities compiled by Bureau of Labor Statistics, U.S. Department of Labor.

Interest rate data to calculate the slope of the yield curve is a little more difficult to obtain in the early years of the sample period. The most popular interest rates used to calculate a spread are the ten-year Treasury Bond and the three-month Treasury Bill. Unfortunately, data for the ten year bond only goes back to 1959 and data the three-month T-bill starts in the 1930s. Researchers analyzing recent data have used U.S. government security yields since their interest rates do not contain a premium for default risk. These securities are often referred to risk free assets since governments can always raise taxes to pay off interest obligations.

Scholars that have used interest rate spreads to analyze earlier time periods have used private sector interest rates. Mankiw and Miron (1986) use 3 and 6-month time rates from New York banks. Fama (1990) uses the yield on the AAA corporate bond portfolio as the long rate and one-month treasury bill rate for the short rate. The AAA data was proprietary data from Ibbotson Associates and is not readily available. Taking a very similar approach, Schwert (1990) used AA yields and a one-month Treasury yield.

Schwert and Fama both mix government securities and corporate securities to form their spreads. This may be somewhat problematic since the corporate yield contains some default risk and the government security contains none, or at least less. However, this problem is lessened since the default rate on the highly rated bonds is likely to be small. The AA series used by Schwert is useful in this study since it goes back to 1919 and allows me to

use most of my election data. I obtained the data for this series from the NBER historical macroeconomic variables data sets (1919 to 1964) and from the St. Louis Federal Reserve after 1964. For my short rate I use the yield on six-month commercial paper. This has the advantage of being a corporate rate just like the Aa series and is available for the whole sample period. I obtained this data from the NBER and Federal Reserve Board. I specify SPREAD as the Aaa yield minus the 6-month commercial paper yield.

The next section adds the holding period return and SPREAD to a retrospective model of voting. I chose the Grier McGarrity model because it provides the most robust evidence of retrospective voting, ensuring an adequate control for the retrospective variables. Therefore, if the prospective variables are significant, they will be so when the retrospective model was considered in its best light. I also present results when a more familiar vote share model is employed.

A RETROSPECTIVE MODEL

This paper employs the Grier McGarrity (1998, 2002) model which assumed a retrospective voter and measured the economy's performance with annual data from the year of the election. While some different specifications appear in the literature, the annual data is the most common. The dependent variable is the incumbent return rate from House members of the President's party . Members who died in office, resigned to run for another elective office, took a cabinet position, judgeship, or another government job are excluded from the calculations.

The Grier-McGarrity model employs two types of variables: economic performance variables and political variables. The first type are INCOME which is the growth rate of real personal income in the year of the election; INFLATION which is the growth rate in the consumer price index in the year of the elec-

tion; and UNEMPLOYMENT which is the unemployment rate in the year of the election.

These economic variables are not perfect for capturing past conditions since just under two months of the information in the averages occurs after the election. However, this specification has been adopted since it is the dominate one in the literature. Further, the variable that is most often included in economic models is INCOME and monthly data for this variable is not available for the early part of the sample. Additionally, the prospective component of the variable will be minor since the average contains information from less than two months after the election.

The post election future information contained in the variable is for a very short time horizon. Also this information will be averaged, lessening its influence. Finally, the short term yield used to calculate the SPREAD is a 6-month rate which is far enough into the future that on election day it does not overlap with the election year economic variables.

The political variables are REDIST and INCPRES.[8] REDIST is a dummy variable that equals one in the first election after a redistricting. This variable should negatively influence the incumbent return rate for several reasons. First, states that lose seats will find incumbents running against each other. No matter who wins an incumbent will lose. In the states that gain seats, there are not enough incumbents available to fill each seat with an incumbent. Further, when the district lines are redrawn an incumbent has to seek votes from people who were never represented by this legislator before. Their former congressman would have taken credit for all the government actions that bene-

[8] The Grier-McGarrity Model has a dummy variable for presidential elections and this paper uses INCPRES to better capture the influence of coattails.

fited this district. The incumbent would have to start over building good will with people he has not represented before.

INCPRES is a dummy variable that equals one during an election when an incumbent President is running for re-election. President's often have coattails. This variable will measure the influence of Presidential reelections on House races.

Table 1 presents summary statistics for the variables in the model just discussed. "Return Rate" is the return rate for all

Table 1
Summary Statistics: 1916-1996

Variable	N	Mean	Std. Dev.	Min	Max
Return Rate	41	79.46	10.39	42.93	90.95
Vote Share	41	62.82	5.51	47.62	75.45
Income	41	2.12	5.88	-17.43	15.79
UN	41	7.00	5.04	1.20	23.60
Inflation	41	3.50	5.04	-10.39	16.52
Wt (Jan.-Oct.)	41	0.03	0.16	-0.47	0.24
Wt (Jan.-Dec.)	41	0.01	0.17	-0.52	0.33
SPREAD (Jan.- Oct.)	39	3.31	4.06	-3.07	12.68
SPREAD (Jan.- Dec.)	39	3.30	4.03	-2.95	12.31
SPREAD (Oct.)	39	3.27	4.01	-3.32	10.91

House incumbents in the President's party. "Vote Share" is the percentage of the two party vote for presidential Party incumbents. The next three variables are the economic variables: Income, UN, and Inflation. "Wt" is various specifications of holding period returns. "SPREAD" is the long term yield minus the short term yield. Data definitions appear in Appendix A.

October monthly data. While the fourth estimate keeps the same holding period return, it specifies the spread with the yield in the month before the election (October). In this specification SPREAD gives the information from the yield curve at the time

Table 2

Impact of Economic Variables on Return Rates of Incumbent Members of President's Party, 1916-1996

t-statistics (in parentheses) calculated using Newey West Heteroskedasticity and Autocorrelation Consistent standard errors with a lag truncation parameter set at 3.

	Return Rate					
Variables	**1** N=39	**2** N=39	**3** N=39	**4** N=39	**5** N=41	**6** N=41
Constant	59.89	66.95	67.94	69.24	55.80	55.87
	(4.20)	(2.25)	(2.32)	(4.81)	(4.44)	(4.53)
Time trend	0.29	0.18	0.18	0.19	0.33	0.34
	(1.93)	(0.52)	(0.51)	(1.23)	(2.47)	(2.64)
Income	0.94	0.93	0.96	0.94	0.81	0.85
	(5.41)	(4.19)	(4.39)	(5.15)	(4.34)	(4.34)
Unemployment	-0.60	-0.56	-0.60	-0.53	-0.52	0.59
	(-2.49)	(-2.28)	(-2.35)	(-1.98)	(-2.24)	(-2.27)
Inflation	-0.59	-0.56	-0.57	-0.48	-0.53	-0.66
	(-2.32)	(-2.28)	(-1.87)	(-1.79)	(-2.20)	(-2.87)
REDIST	-8.15	-8.27	-8.07	-8.29	-8.13	-8.09
	(-2.71)	(-2.72)	(-2.70)	(-2.92)	(-2.65)	(-2.68)
Incumbent President	4.04	3.84	3.93	3.97	3.18	3.36
	(1.94)	(1.92)	(1.88)	(1.65)	(1.38)	(1.47)
Wt (Jan.-Dec.)		8.52			10.48	
		(1.36)			(1.86)	
SPREAD (Jan.-Dec.)		0.33				
		(0.44)				
Wt (Jan.-Oct.)			4.97	5.90		
			(0.68)	(0.78)		
SPREAD (Jan.-Oct.)			0.37			
			(0.50)			
SPREAD (Oct.)				-0.82		
				(-1.09)		
R^2	0.58	0.61	0.59	0.60	0.59	0.56

RESULTS

Return Rates

Table 2 contains the estimates of the model outlined above where the dependent variable is the return rate of Presidential Party incumbents in the House.

Column one provides a starting point for our analysis. It replicates the Grier-McGarrity model, containing the three retrospective economic variables, the political variables, and a time trend.[9] All are significant at the 1% level and move in the expected direction. These results suggest that voters weigh past economic performance when voting.

In the next three columns, estimates are presented when various specifications of the two variables that capture economic expectations are added to the equation estimated in Column one. In column 2, we add (1) the election year holding period return and (2) the interest rate spread, calculated using the annual average of monthly election year yields. Of the two prospective economic variables, only the holding period return is significant at the 10% level (t-statistic = 1.36), while the interest rate spread does not seem to be statistically important (t-statistic = 0.4). The retrospective economic variables remain significant at conventional levels with roughly similar coefficients.

The next two columns estimate the model when the two forward looking variables are specified with the monthly data actually available to voters before the election, the January to

[9] Obviously, the model will not be appropriate indefinitely because it has a time trend and the dependent variable is capped at 0 and 100. However, the trend seems to capture the gradually increasing return rate over time. This trend is consistent with Polsby's (1968) classic finding that members of the House are increasingly considering their elected service as a career rather than a short visit. To see if the time trend created any undo problems in my sample, I looked at the predicted values for all the estimates reported in Tables 2 and 3. In every case the predicted values were less than 100.

of the election. However, in both estimates the economic variables that capture expectations are insignificant at conventional levels. The largest t-statistic among these four estimated coefficients is -1.09.

Next, I consider the specification that provided the most support for the forward looking variables which can be found in column 2. I drop the interest rate spread variable since it is clearly not significant. I also add data from two elections at the beginning of the sample that were dropped so the interest rate spread variable could be included in the estimate. With this variable dropped, we are free to use our entire data set. Column 5 presents these results. The influence of expected future conditions is small at the polls. The holding period return suggests that a one percent increase in the holding period return might raise the return rate from 79.46% to 79.47%, a very small increase indeed.

To get a better idea of the relative magnitude of the influence of the prospective and retrospective economic variables consider a one standard deviation change in each economic variable in the direction that increases the return rate. Doing so shows that a typical change in the three retrospective economic variables have a larger influence on the return rate than does a typical change in the holding period return. That is, assuming a one standard deviation change in a variable is a typical change. The most influential variable is INCOME and when it increases by one standard deviation the return rate increase by 4.79 points. Similar negative movements for inflation and unemployment increase the return rate by 2.67 points and 2.60 points respectively. A one standard deviation increase in the holding period return only increases the return rate by 1.80 points. Therefore, a typical movement in the stock market has only 38% of the effect that a typical change in INCOME has at the polls and 67% of the impact of a typical change in inflation. Although the holding period return is signifi-

cant at the 5% level, its influence is small relative to the influence of the retrospective variables.

Vote Share

Next, we estimate the model when the dependent variable is the vote share of the incumbent President's party. Column 1 of Table 3, presents the results when it is estimated with the retrospective economic variables, the political variables, and a time trend. While all retrospective economic variables move in the expected direction, they are not as strongly significant as they were in the return rate equation. Still however, the estimates suggest that retrospective voting is important. Unemployment and Income are significant at the 5% level, and inflation at the 11% level.

Column 2 estimates the equation when the two prospective economic variables are added. They are calculated using annual averages of monthly election year data. Of the two new variables, only the interest rate spread is significant at the 10% level (t-statistic = 1.45). The results are similar when only the months before the election are used to calculate the prospective variables. These results are shown in column 3. The results are also similar when the January to October holding period and the October yield are the specification employed.

This previous estimate seems to be the one that provides the strongest evidence of prospective voting. SPREAD is significant at just under the 10% level and the holding period return is significant at just over the 10% level. Further, the sum squared residual for this equation is the lowest of the three estimates discussed in Table 3. To get an idea of how influential the retrospective economic variables are compared to the prospective economic variables, we consider the effect of a one standard deviation change in each. To do this, we use the estimates found in column 3 when the prospective variables are considered in

Table 3
Impact of Backward and Forward Looking Economic Variables on Vote Share of Incumbent Members of President's party, 1916-1996

t-statistics (in parentheses) calculated using Newey West Heteroskedasticity and Autocorrelation Consistent standard errors with a lag truncation parameter set at 3.

	Return Rate			
Variables	**1** N=39	**2** N=39	**3** N=39	**4** N=39
Constant	56.38	63.76	63.41	63.54
	(9.14)	(9.29)	(9.00)	(9.43)
Time trend	0.11	0.01	0.014	0.01
	(1.61)	(0.10)	(0.17)	(0.13)
Income	0.24	0.25	0.24	0.25
	(2.25)	(2.13)	(2.06)	(2.17)
Unemployment	-0.53	-0.52	-0.53	-0.51
	(-4.39)	(-4.48)	(-4.47)	(-4.33)
Inflation	-0.174	-0.15	-0.15	-0.14
	(-1.23)	(-1.08)	(-0.99)	(-1.03)
REDIST	-2.16	-2.28	-2.04	-1.99
	(-1.00)	(-1.04)	(-0.94)	(-0.92)
Incumbent President	4.14	4.07	3.99	3.96
	(2.64)	(2.56)	(2.55)	(2.48)
Wt (Jan.-Dec.)		4.85		
		(1.13)		
SPREAD (Jan.-Dec.)		0.34		
		(1.45)		
Wt (Jan.-Oct.)			5.48	5.52
			(1.195)	(1.24)
SPREAD (Jan.-Oct.)			0.32	
			(1.36)	
SPREAD (Oct.)				0.34
				(1.40)
$\mathbf{R^2}$	0.51	0.55	0.55	0.60

their best light. Again assuming a one standard deviation movement in a variable represents a typical change. Of all the economic variables, a typical increase in unemployment has the

largest influence on the vote share, reducing it by 2.60 percentage points. Typical changes in INCOME and the interest rate spread have almost identical effects on vote share (1.38 and 1.36 percentage points). Such changes in the holding period return increase vote share by 0.88 percentage points and these changes in inflation decrease vote share by 0.66 percentage points.

In the vote share equation, the evidence is mixed. While unemployment is clearly the most influential economic variable, one prospective variable is more influential than two retrospective variables and the other forward looking variable is more influential than one retrospective variable. These results contrast with our former findings: when elections were measured with actual wins and loses, retrospective voting seemed to dominate prospective voting. In either case, the inclusion of the forward looking variables dropped the significance level of inflation while leaving the other retrospective variables pretty much unaffected. This may have occurred because the interest rate spread includes a short term yield that takes into account the current inflation rate. This overlap of information given in the two variables may explain why inflation's significance level dropped when the interest rate spread was included in the equation.

Forecasts

Adding variables to an equation will always increase the R-square. However, adding variables to an equation can hurt the accuracy of its forecasts. Another way to test whether the forward looking variables are important is to see whether including them in the estimated equation allows us to make more or less accurate out-of-sample forecasts. The three elections after 1996 are used to evaluate the forecasts.

From the return rate equations in Table 2, I consider the estimated coefficients in the last two columns. The equation in column 5 includes the January to December holding period return,

while the equation in column 6 contains no prospective economic variables. The estimated coefficients are multiplied by their corresponding independent variables to calculate a predicted value. This was done for each of the three additional out of sample elections. The equation that includes holding period returns has more accurate forecasts for the 1998 and the 2000 elections. However, the difference in forecasts is small—only 0.65 and 0.63 percentage points, respectively. In the 2002 election the retrospective model performs better, but here again the difference in forecasts is small—only 0.47 percentage points. As one would expect, the mean absolute deviations between the predicted and actual values are similar across the two equations.[10] In all, the forecasts tell the same story found with the in-sample results, the holding period return adds some insight into how voters will cast their ballots but the level of influence is small relative to the retrospective variables.

Overall, the success of the forecasts is mixed. In the 1998 election, equation 5 predicted a return rate that was within 1.25 points of the actual rate. The predicted value for 2000 was also respectable. It was only off by 5.15 points which is one-half of a standard deviation of the return rate. However, both estimates where off by 9 percentage points in 2002.

I did not include forecasts of vote share using the equations in Table 3 because the short term interest rate used in SPREAD only extends through the 1996 election. SPREAD was not significant in the return rate equations, but was marginally significant in the vote share equations.

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[10] The mean absolute deviation is 5.34 when the holding period return is included and 5.62 when it is not.

Monthly Holding Period Returns & Other Specification Tests

We can delve more deeply into holding period returns' relevance in House elections. It can be argued that people consider future business conditions over a short period of time when deciding how to vote in an election. If so, the ten to twelve-month holding periods that I used to specify this variable may be too large. I add one-month holding periods to the equation estimated in column 6 of Table 2; I do so for each of the six months preceding the election. The first six columns of Table 4 report these estimates. In every case the retrospective economic variables remained significant at the 5% level. In four specifications, the holding period return had t-statistics less than 0.46. Two successive months had holding periods that were significant at the 5% level in a one tailed test. However, the July to August holding period is the wrong sign. Therefore, returns during these months seem to cancel each other out and do not suggest a strong consistent pattern of stock market influence on elections. Taken as a whole, these results suggest prospective expectations formed in the six-month time period before the elections have no special significance. When the equation is estimated using only one monthly return rate at a time, these results are similar to those just discussed.

Next, I consider the monthly holding period returns when they are added to the vote share equation. These results, shown in Table 5, are a bit more supportive of the notion that a stock market rise in the six months before the ballots are cast improves the election results for the president's party. However, this evidence is not very strong.

When the 6 one-month holding period return rates are added one at a time to the equation, only two monthly returns are significant at the 10% level. The results are less supportive when all 6 holding periods are estimated as part of a single equation. As the last column of results shows, the results become mixed with both positive and negative signs on the coefficients.

Table 4
Impact of Economic Variables on Return Rates of Incumbent Members of the President's Party, 1916-1996 (n = 41)

t-statistics (in parentheses) calculated using Newey West Heteroskedasticity and Autocorrelation Consistent standard errors with a lag truncation parameter set at 3.

	Return Rate						
Variables	**April-May**	**May-June**	**June-July**	**July-Aug.**	**Aug.-Sept.**	**Sept.-Oct**	**All Periods**
Constant	55.80 (4.46)	55.96 (4.56)	53.94 (4.31)	57.99 (4.74)	55.87 (4.54)	56.02 (4.40)	55.03 (4.15)
Time trend	0.34 (2.63)	0.34 (2.64)	0.36 (2.76)	0.31 (2.46)	0.34 (2.65)	0.34 (2.57)	0.35 (2.47)
Income	0.85 (4.29)	0.84 (3.82)	0.87 (4.28)	0.73 (4.56)	0.85 (4.29)	0.82 (4.13)	0.81 (4.39)
Unemployment	-0.62 (-2.46)	-0.59 (-2.19)	-0.64 (-2.81)	-0.52 (-2.29)	-0.59 (-2.21)	-0.61 (-2.34)	-0.55 (-2.48)
Inflation	-0.66 (-2.83)	-0.66 (-3.02)	-0.57 (-2.59)	-0.80 (-3.19)	-0.66 (-2.89)	-0.68 (-2.76)	-0.65 (-2.40)
REDIST	-8.15 (-2.71)	-8.00 (-2.36)	-8.64 (-2.95)	-6.42 (-2.91)	-8.09 (-2.53)	-8.02 (-2.69)	-7.68 (-2.96)
Incumbent President	3.38 (1.46)	3.36 (1.44)	2.67 (1.21)	4.47 (2.49)	3.35 (1.44)	3.51 (1.56)	3.36 (1.90)
Wt (April-May)	-6.54 (-0.35)						-0.21 (-0.08)
Wt (May-June)		2.25 (0.08)					-11.57 (-0.40)
Wt (June-July)			41.73 (2.47)				49.37 (1.80)
Wt (July-Aug.)				-33.36 (-1.63)			-44.10 (-2.09)
Wt (Aug.-Sept.)					0.12 (0.00)		23.47 (0.78)
Wt (Sept.-Oct.)						9.31 (0.45)	-21.51 (-0.85)
$\mathbf{R^2}$	0.57	0.57	0.60	0.59	0.57	0.57	0.64

CONCLUSION

This paper tests whether voters are retrospective (backward looking) or prospective (forward looking) when assigning electoral responsibility for macroeconomic conditions. It is innovative by using the stock market and yield curve to measure forward-looking expectations.

When election results are measured with wins and losses, voters seem to weigh past economic conditions more than future expectations. However, voters weigh both about the same when the election results are measured with vote share.

This paper finds that prospective and retrospective economic concerns are not mutually exclusive. Voters seem to have both. The debate can now center on what is the relative magnitude of past, versus expected future, economic conditions.

APPENDIX A
DATA DEFINITIONS

Incumbents President's Party Returned: $Number\ Returned_{t+1}/(seatst - dienumt - resumt)$. Where "Number Returned" is the number of presidential party incumbents re-elected found in the *Congressional Quarterly Guide to Elections* (through 1984) and *Congressional Quarterly Almanac* (1986-1996).Where "$Seats_t$" is the number of non-vacant seats in congress t held by the president's party found in the *Congressional Directory*. "$Dienum_t$" is the number of representatives in the president's party who died in the current congress. "$Resnumt_1$" is the number of congressmen in the president's party who resigned to run for another elected office, to take a cabinet position, judgeship, or another government job.

Presidential Party Incumbents is the percent of the two party vote received by incumbents from the president's party when running against non-incumbent challengers from the opposition party. Any incumbent who switched parties between elections was excluded from the following election. Incumbents from districts not reporting vote totals were excluded. Incumbents were identified from the *Congressional Directory* (64^{th}-104^{th} Congress). Election results were taken from *Congressional Quarterly's Guide to Elections (1916-1984)* and the *Congressional Quarterly Almanac* (1986-1996).

Inflation is $log\left(\frac{CPI_t}{CPI_{(t-1)}}\right) * 100$. Where CPI_t is the consumer price index in the year of the election and $CPT_{(t-1)}$ is the consumer price index in the year before the election.

Unemployment is the adult civilian unemployment rate in the year of the election.

Growth in Personal Income is $log\left(\frac{INC_t}{INC_{(t-1)}}\right) * 100$ Where INC_t is the personal per capita income in the year of the election and $INC_{(t-1)}$ is the personal per-capita income in the year before the election.

Redistricting is a dummy variable equal to one for first election after a redistricting.

Incpres is a dummy variable equal to one when the incumbent president is running for reelection.

TREND is a linear time trend that increases by one for each observation. It starts with 64, which was first Congress to face reelection in the sample period.

Growth in the Standard and Poor's 500 Index is $(W_t) = [log(S\&P_j) - log(S\&P)_{j-1})] * 100$. $S\&P_j$ is the average of the monthly deflated Standard and Poor's 500 Index for year j. Year j runs from January to October (I also use specifications that are 12 months long—January to December and November of the previous year to October). Log refers to the natural log. In the earlier sample (until 1932), the stock price index is deflated with the Warren and Pearson's Wholesale Price Index (10-13). In the later sample (after 1932), the stock price series is deflated with the *Producer Price Index for All Commodities* compiled by the Bureau of Labor Statistics,U.S. Department of Labor.

SPREAD The difference between the AA yield and the yield on 6-month commercial paper.

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